

Application No.
Amendment dated January 11, 2008
Reply to Office Action dated February 08, 2007

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended) An electronic system for locating an object comprising:
a monitoring monitor unit having a micro-controller, wherein the monitor unit transmits a monitor direct sequence spread spectrum (MDSSS) signal having a pseudo-random noise sequence, a monitor first frequency component and a monitor second frequency component;
a tracked unit placed on [[said]] the object and receiving [[a]] the monitor direct sequence spread spectrum (MDSSS)-MDSSS signal from [[said]] the monitoring monitor unit and transmits a tracked direct sequence spread spectrum (TDSSS) signal having a pseudo-random noise sequence, a first frequency component and a second frequency component to [[said]] the monitoring monitor unit; and
wherein the [[a]] first phase detector placed on said monitor unit to compare micro-controller compares [[a]] the first frequency component of [[said]] the TDSSS signal to the [[a]] monitor first frequency component of the MDSSS signal creating a first phase difference utilized for a coarse accuracy determination of the a object ranging distance relative between the to said monitor unit and the tracked unit,
further wherein the micro-controller compares the second frequency component of the TDSSS signal to the monitor second frequency component of the MDSSS signal to create a second phase difference utilized for a medium accuracy determination of range between the tracked unit on the object and the monitor unit.

Claim 2 (cancelled)

Claim 3 (currently amended) [[An]] The electronic system as recited in Claim [[2]] 1, wherein the monitor unit further comprising: includes a monitor phase detector, the MDSSS signal further includes a monitor third frequency component and the TDSSS signal further includes a third

Application No.
Amendment dated January 11, 2008
Reply to Office Action dated February 08, 2007

frequency component, wherein the monitor phase detector a third phase detector comparing compares the [[a]] third frequency component of [[said]] the TDSSS signal with [[a]] the monitor third frequency component to create a third phase difference; and the micro-controller an output of second phase detector determines the number of repeated frequency cycles of [[said]] the tracked third frequency component of [[said]] the TDSSS signal [[for]] to the monitor third frequency component of the MDSSS signal for fine accuracy determination of said object ranging distance relative to said monitor unit range between the tracked unit on the object and the relative to monitor unit of said object.

Claim 4 (currently amended) [[An]] The electronic system as recited in Claim 1, wherein [[said]] the first frequency component of [[said]] the TDSSS signal is a repetition rate of [[said]] the tracked TDSSS pseudo-random noise sequence and [[said]] the first monitor first frequency component is a repetition rate of [[said]] the monitor MDSSS pseudo-random noise sequence.

Claim 5 (currently amended) [[An]] The electronic system as recited in Claim 1, wherein [[said]] the second frequency component of [[said]] the TDSSS signal is a chipping frequency of [[said]] the tracked TDSSS pseudo-random sequence and [[said]] the monitor second frequency component of [[said]] the MDSSS is a chipping frequency of [[said]] the monitor MDSSS pseudo-random noise sequence.

Claim 6 (currently amended) [[An]] The electronic system as recited in Claim [[1]] 3, wherein [[said]] the third frequency component of [[said]] the TDSSS signal is a carrier frequency and [[said]] the monitor third frequency component of [[said]] the MDSSS signal is a carrier frequency.

Claim 7 (currently amended) [[An]] The electronic system as recited in Claim 1, wherein [[said]] the monitor unit further includes comprises a first monitor antenna disposed on [[said]] the monitor unit and a second monitor antenna disposed on [[said]] the monitor unit, which said wherein the first monitor antenna is cross-polarized relative to [[said]] the second monitor

Application No.
Amendment dated January 11, 2008
Reply to Office Action dated February 08, 2007

antenna for measuring [[said]] the object ranging distance and relative angle from [[said]] the monitor unit.

Claim 8 (currently amended) [[An]] The electronic system as recited in Claim 1, wherein [[said]] the second frequency component of [[said]] the TDSSS signal is a pseudo-random noise sequence input into a first shift register and a second shift register, creating [[said]] the first phase difference between [[said]] the second frequency component of TDSSS signal and [[said]] the monitor second frequency component of [[said]] the MDSSS signal.

Claim 9 (currently amended) [[An]] The electronic system as recited in Claim 1, wherein [[said]] the tracked unit further includes a tracked modulator and a tracked phase detector, wherein the tracked modulator shifts the TDSSS pseudo-random noise sequence and inputs the shifted TDSSS pseudo-random noise sequence into the tracked phase detector until the TDSSS pseudo-random noise sequence locks with the MDSSS pseudo-random noise sequence, receives a monitor carrier frequency from [[said]] the monitor unit, wherein [[said]] the tracked unit includes a phase lock loop that locks [[said]] the MDSSS signal with [[said]] the TDSSS signal.

Claim 10 (currently amended) [[An]] The electronic system as recited in Claim 1, wherein [[said]] the monitor unit further comprises includes a monitor compass having concentric rings, wherein the monitor micro-controller is in electrical communication with the the monitor compass, which displays location of [[said]] the tracked unit within several the concentric rings to provide a visual display for a user of [[said]] the object ranging distance between [[said]] the monitor unit and [[said]] the tracked unit, when in use.

Claim 11 (currently amended) [[An]] The electronic system as recited in Claim 1, wherein [[said]] the monitor unit further comprises a monitor compass having user selectable zones represented by concentric zone rings –which , wherein the monitor compass displays [[said]] the object ranging distance of [[said]] the tracked unit relative to [[said]] the monitor unit within the user selectable zones. , and a user selects one zone from several concentric rings of coverage.

Application No.

Amendment dated January 11, 2008

Reply to Office Action dated February 08, 2007

Claim 12 (currently amended) An electronic system for locating an object comprising:
a monitoring monitor [[unit]] unit having a micro-controller having a monitor phase detector, wherein the monitor unit transmits a monitor direct sequence spread spectrum (MDSSS) signal having a pseudo-random noise sequence, a monitor first frequency component and a monitor second frequency component;

a tracked unit placed on [[said]] the object receiving [[a]] the monitor digital spread spectrum signal (MDSSS) MDSSS signal from [[said]] the monitoring monitor unit and transmits a tracked direct sequence spread spectrum (TDSSS) signal having a first frequency component, a second frequency component and a pseudo-random noise sequence, to [[said]] the monitoring monitor unit; [[and]]

wherein the micro-controller [[a]] first phase detector placed on said monitor unit to compare compares [[a]] the first frequency component of [[said]] the tracked direct sequence spectrum TDSSS signal to the [[a]] monitor first frequency component of the MDSSS signal creating a first phase difference utilized for a coarse accuracy determination of [[said]] the object distance ranging relative to [[said]] the monitor unit;

further wherein, the micro-controller a second phase detector included with said monitor unit that compares [[a]] the second frequency component of [[said]] the tracked direct sequence spread spectrum-TDSSS signal with [[a]] the monitor second frequency component of the MDSSS signal to create a second phase difference; and

wherein the monitor phase a first detector monitors phase error output to determine determines number of repeated frequency periods of [[said]] the second frequency component of the TDSSS signal for a medium accuracy determination of range relative to the monitor unit of [[said]] the object range,

wherein [[said]] the first frequency component of [[said]] the TDSSS signal is a repetition rate of [[said]] the tracked TDSSS pseudo-random noise sequence and

wherein [[said]] the second frequency component of [[said]] the TDSSS signal is a chipping frequency of [[said]] the tracked TDSSS pseudo-random noise sequence.

Claim 13 (currently amended) [[An]] The electronic system as recited in Claim 12, wherein the tracked unit further includes a tracked phase detector, the TDSSS signal further comprising:

Application No.

Amendment dated January 11, 2008

Reply to Office Action dated February 08, 2007

includes a third phase detector comparing a third frequency component and the MDSSS signal further includes a monitor third frequency component, wherein the tracked phase detector compares the third frequency component of [[said]] the TDSSS signal with [[a]] the third monitor third frequency component of the MDSSS to create a third phase difference; and

an output of the second phase detector wherein the micro-controller determines the number of repeated frequency cycles of [[said]] the third frequency component of [[said]] the TDSSS signal for fine accuracy determination of an object ranging distance between [[said]] the monitor and tracked unit.

Claim 14 (currently amended) [[An]] The electronic system as recited in Claim [[12]] 13, wherein [[said]] the third frequency component of [[said]] the TDSSS signal is a carrier frequency and [[said]] the monitor third frequency component of [[said]] the MDSSS signal is a carrier frequency.

Claim 15 (currently amended) [[An]] The electronic system as recited in Claim 12, wherein [[said]] the monitor unit further comprises a first monitor antenna disposed on [[said]] the monitor unit and a second monitor antenna disposed on [[said]] the monitor unit, wherein the first monitor antenna is cross-polarized relative to [[said]] the second monitor antenna for measuring [[said]] the object range and relative angle from [[said]] the monitor unit.

Claim 16 (currently amended) [[An]] The electronic system as recited in Claim 12, wherein the monitor unit further includes a first shift register and second shift register and [[said]] the second frequency component of [[said]] the TDSSS signal is a pseudo-random noise sequence input into [[a]] the first shift register circuit and [[a]] the second shift register circuit placed with said monitor unit, creating [[said]] the first phase difference between [[said]] the second frequency component of [[said]] the TDSSS signal and [[a]] the second frequency component of [[said]] the MDSS signal, which is a pseudo-random noise sequence.

Claim 17 (currently amended) [[An]] The electronic system as recited in Claim 12, wherein [[said]] the monitor unit further comprises a monitor compass having at least four coverage

Application No.

Amendment dated January 11, 2008

Reply to Office Action dated February 08, 2007

zones indicated by concentric rings, which displays object ranging distance between [[said]] the tracked unit and [[said]] the monitor unit, wherein [[said]] a user selects one coverage zone from the several concentric rings of coverage for tracking [[said]] the tracked unit.

Claim 18 (currently amended) A method for detecting the range of an object comprising:
placing a tracked unit on [[said]] the object, wherein the track unit includes a tracked direct spread spectrum (TDSSS) signal having a first frequency component and a second frequency component;

transmitting from a monitor unit a monitor direct sequence spread spectrum (MDSSS) signal having a monitor first frequency component and a monitor second frequency component from a monitoring unit, wherein the monitor unit includes a monitor phase detector;

receiving [[said]] the MDSSS signal at [[said]] the tracked unit;

transmitting from [[said]] the tracked unit [[a]] the tracked direct sequence spread spectrum (TDSSS) TDSSS signal to [[said]] the monitoring monitor unit;

comparing [[a]] the first frequency component of [[said]] the TDSSS signal to [[a]] the monitor first frequency component of [[said]] the MDSSS signal within [[a]] the first monitor phase detector; [[and]]

outputting a first phase shift for course accuracy determination of [[said]] the object range relative to [[said]] the monitor unit unit;

comparing the second frequency of the TDSSS signal to the monitor second frequency component of the MDSSS signal within the monitor phase detector;

outputting a second phase shift; and,

determining the number of repeated frequency periods of the second frequency component of the TDSSS signal.

Claim 19 (canceled)